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Appeal  
Brief  
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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|------------------------------|---|--------------------------|
| In re Patent Application of  | ) | Group Art Unit: 2712     |
| YASUO IWASAKI                | ) | Examiner: C. Onuaku      |
| Application No. 08/826,744   | ) | <b>APPELLANT'S BRIEF</b> |
| Filed: April 7, 1997         | ) | 2001 Ferry Building      |
| For: AUDIO AND/OR VIDEO DATA | ) | San Francisco, CA 94111  |
| RECORDING AND REPRODUCING    | ) | (415) 433-4150           |
| APPARATUS AND METHOD OF      | ) | Atty Docket: SONY-P7325  |
| SAME                         | ) |                          |
|                              | ) |                          |
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|                              | ) |                          |

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Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

This is an appeal from the decision dated September 28, 1999  
(Paper No. 14), of the Examiner finally rejecting claims 1-18.

**Real Party in Interest**

Sony Corporation is assignee and the real party in interest.

**Related Appeals and Interferences**

There are no other related appeals or interferences known to  
Appellant, the Appellant's legal representative, or Assignee which  
will directly affect or be directly affected by or have a bearing on the  
Board's decision in this appeal.

**Status of the Claims**

Claims 1, 7, 10-11 and 17-18 stand rejected under 35 U.S.C. § 103 as being unpatentable over Kassatly, U.S. Patent No. 5,790,177. Claims 2-3, 8-9 and 12-13 stand rejected under 35 U.S.C. § 103 as being unpatentable over Kassatly in view of Windrem et al., U.S. Patent No. 5,754,730 ("Windrem"). Claims 4-5 and 14 stand rejected under 35 U.S.C. § 103 as being unpatentable over Kassatly in view Nakayama et al., U.S. Patent No. 4,947,271 ("Nakayama"). Claim 15 stands rejected under 35 U.S.C. § 103 as being unpatentable over Kassatly in view Nakayama, further in view of Morimoto et al., U.S. Patent No. 5,841,941 (hereinafter Morimoto). Claim 6 stands rejected under 35 U.S.C. § 103 as being unpatentable over Kassatly in view of Nakayama, further in view of Windrem. Claim 16 stands rejected under 35 U.S.C. § 103 as being unpatentable over Kassatly in view of Nakayama and Morimoto, further in view of Windrem. The rejection of claims 2-6, 8-9 and 12-16 is the subject of this appeal, and a copy of claims 2-6, 8-9 and 12-16 is included in the Appendix.

**Status of Amendments**

An amendment after the Final Rejection was filed on January 3, 2000. Such amendment canceled claims 1, 7, 10-11 and 17-18 and rewrote the claims directly dependent therefrom in independent form. In the Advisory Action dated January 18, 2000 the Examiner indicated that such amendment would be entered upon filing of a Notice of Appeal and an Appeal Brief. Thus, claims 1, 7, 10-11 and 17-18 are not addressed in this Appeal Brief.

### Summary of Invention

With reference to Figures 8 and 11 of the drawings, which are provided in the Appendix hereto at pages viii-ix, applicants' invention relates to an audio/video recording and reproducing apparatus. See Figure 8, element 5. The apparatus includes a plurality of recording means. See Figure 8, element 52. In one embodiment, each of the recording means includes a disk drive and a mirror disk drive that record the same audio/video data. See Figure 8, elements 522a and 522b. In another embodiment, each of the recording means includes a plurality of recording apparatuses connected in parallel. See Figure 8 (showing elements 522a and 522b in parallel). In yet another embodiment, an input data stream includes multiplexed control data. See the specification at page 28, line 14 through page 29, line 3. In still another embodiment, the apparatus further includes a plurality of similar apparatuses, all connected in parallel. See Figure 11, elements 5a-5f; and the specification at page 40, lines 8-11.

### Issues

1. Is the Examiner in error in rejecting claims 2-3, 8-9 and 12-13 under 35 U.S.C. § 103 as being unpatentable over Kassatly in view of Windrem?
2. Is the Examiner in error in rejecting claims 4-5 and 14 under 35 U.S.C. § 103 as being unpatentable over Kassatly in view of Nakayama?
3. Is the Examiner in error in rejecting claim 15 under 35 U.S.C. § 103 as being unpatentable over Kassatly in view of Nakayama, further in view of Morimoto?
4. Is the Examiner in error in rejecting claim 6 under 35 U.S.C. § 103 as being unpatentable over Kassatly in view of Nakayama, further in view of Windrem?

5. Is the Examiner in error in rejecting claim 16 under 35 U.S.C. § 103 as being unpatentable over Kassatly in view of Nakayama and Morimoto, further in view of Windrem?

### **Grouping of the Claims**

For the reasons set forth in more detail in the following argument section, the claims do not stand or fall together. Claims 2, 8-9 and 12 stand or fall together. Claims 3 and 13 stand or fall together. Claims 4-5 and 14-15 stand or fall together. Claims 6 and 16 stand or fall together.

### **Argument**

#### ***Rejection of claims 2-3, 8-9 and 12-13 under 35 U.S.C. § 103***

In the Office Action mailed September 28, 1999, the Examiner finally rejected claims 2-3, 8-9 and 12-13 under 35 U.S.C. § 103 as being unpatentable over Kassatly in view of Windrem.

#### **The Examiner's Position**

Regarding claim 1, the Examiner stated that Kassatly discloses in Figs. 1, 2, 3 and 43 a digital video tape recorder apparatus and method in which video channels are simultaneously recorded in a recording mode, comprising: (a) the claimed receiving means for receiving a data stream in which a plurality of audio data and video data or one of the same are multiplexed in a predetermined order (see the reception process 14 for receiving and processing signals received from the transmitter 12; col. 18, line 66 to col. 19, line 35); (b) the claimed demultiplexing means (see demultiplexer 30; col. 19, line 36 to col. 20, line 34); and (c) the claimed plurality of

recording/reproducing means (see channel 1 to channel n storage means 35 to 39, respectively; col. 19, lines 49-55).

The Examiner conceded that the current embodiment of Kassatly fails to show the claimed multiplexing means for multiplexing the reproduced each one in the predetermined order and generating an output data stream. The Examiner stated that in another embodiment Kassatly discloses wherein when a user wishes to combine the signals in two channels, the signals are caused to be released from their individual storage devices. The Examiner stated that the released signals are multiplexed by a multiplexer and then stored in a single storage device. The Examiner stated that the stored signals are then decompressed and viewed on a real time basis. The Examiner concluded that it would have been obvious to add a multiplexer to multiplex any number of desired signals stored in the storage devices 35-39 in order to combine the signals for further processing.

Regarding claim 2, the Examiner conceded that Kassatly fails to disclose wherein each of the plurality of recording means adopts a mirror configuration having a plurality of recording apparatuses for recording the same audio and/or video data. The Examiner stated that Windrem teaches a digital video recording system employing standard hard disk arrays wherein redundancy is provided through a redundant data controller 99 to handle possible failure of one drive in the array (see col. 2, lines 28-40). The Examiner concluded that it would have been obvious to modify Kassatly by realizing Kassatly with the Windrem redundancy system wherein redundancy is provided through a redundant data controller 99 to handle possible failure of one drive in the array.

The Examiner stated that the applicant argues with respect to claim 11 that Kassatly fails to teach where these discs are

employed. The Examiner responded that Kassatly clearly teaches in col. 14, lines 1-3 that it would be desirable that the present VAD (video, audio and/or data) systems be compatible and usable with most, if not all of these conventional systems. The Examiner concluded that it would have been obvious to one of ordinary skill in the art that Kassatly would use the disk drives for the storage devices of Kassatly.

The Examiner stated that the applicant argues that the Examiner's motivation for combining Kassatly with Windrem is not proper, that the Examiner has failed to point out any teaching in Kassatly, Windrem, or the knowledge generally available to one of ordinary skill in the art that there are any "storage" or "memory storage" failures that need to be overcome. The Examiner stated that the applicant argues that Kassatly fails to teach any disk drives. The Examiner stated that as showed above, Kassatly clearly teaches disk drives. The Examiner stated that the expected benefits from a manufacturing cost point of view of providing redundancy in the storage devices to contain potential failure of a disk array would themselves have been evidence of obviousness. The Examiner stated that expected beneficial results are themselves evidence of obviousness, citing In re Hoffman, 556 F.2d 539, 194 USPQ 126 (CCPA 1977); In re Skoll, 523 F.2d 1392, 187 USPQ 481 (CCPA 1975); and In re Skoner, 517 F.2d 947, 186 USPQ 80 (CCPA 1975).

Regarding claim 3, the Examiner states that Windrem further discloses wherein each of said plurality of recording means adopts an array configuration in which a plurality of recording apparatuses are connected in parallel. The Examiner further states that Windrem teaches in Fig. 1 a disk array 12 comprising an array of disk drives wherein the array of disk drives provides sufficient bandwidth to

record or play digitized video signals, allowing random access to video data (see Fig. 1; disk array 12; col. 1, lines 15-32; and col. 3, lines 31-52).

In the Advisory Action dated January 18, 2000, the Examiner stated that with reference to claim 2, applicant argues that the motivation to combine Kassatly and Windrem is improper because the motivation is not suggested by either of the references and moreover that the Examiner has not pointed any deficiency in the references that would be cured by such combination. The Examiner stated that Kassatly may not have suggested the Examiner's motivation and the Examiner may not have pointed any deficiency in the references that would be cured by such combination. The Examiner asserted that it is not necessary that the references actually suggest, expressly or in so many words, the changes or improvements that applicant has made. The Examiner stated that the test for combining references is what the references as a whole would have suggested to one of ordinary skill in the art, citing In re Sheckler, 168 USPQ 716 (CCPA 1971); In re McLaughlin, 170 USPQ 209 (CCPA 1971); and In re Young, 159 USPQ 725 (CCPA 1968).

#### **Rebuttal to the Examiner's Position**

In response, it is respectfully submitted that the Examiner's rejection is erroneous. It is respectfully submitted that the Examiner has failed to make a prima facie showing of obviousness.

To establish prima facie obviousness, the Examiner must meet three basic criteria. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the reference teachings. Second, there

must be a reasonable expectation of success. Third, the prior art reference (or references when combined) must teach or suggest all the claim limitations. See Manual of Patent Examining Procedure § 2143 (1998) (collecting cases).

**I. Claim 2 - The Examiner Has Failed to Provide a Complete Motivation to Combine Kassatly and Windrem**

It is respectfully submitted that the Examiner has failed to provide a complete motivation to combine Kassatly and Windrem. An Examiner must provide all the logical steps of a motivation to combine references. For example, assume that a claim recites Element C, that Reference X teaches Element A, and that Reference Y teaches that Element B can be modified to result in Element C. In such a situation, the Examiner must provide two logically consistent motivations to combine: (1) a motivation to modify Element A to become Element B ("motivation A-->B"); and (2) a motivation to modify Element B to become Element C ("motivation B-->C"). It is insufficient for the Examiner to provide only a motivation to modify Element A to become Element C (motivation A-->C), or only a motivation to modify Element B to become Element C (motivation B-->C), because such a one-step motivation is incomplete when the two-step motivation is required.

It is respectfully submitted that the Examiner has merely provided a one-step motivation and has failed to provide a complete two-step motivation. Claim 2 recites "wherein each of said plurality of recording means adopts a mirror configuration". The Examiner has asserted that Windrem teaches this feature. Thus, this feature corresponds to Element C using the above notation.



Regarding Element A in the above notation, the Examiner has stated that Kassatly teaches "storage means 35 to 39" and "storage devices 35-39". Thus, this feature corresponds to Element A.

Regarding Element B in the above notation, the Examiner has stated that "Kassatly clearly teaches in col. 14, lines 1-3 that it would be desirable that the present VAD (video, audio and/or data) system be compatible and usable with most, if not all of these conventional systems." It is assumed that such conventional systems are those recited in the list at col. 13, line 64 through col. 14, line 1; namely, video tapes (such as VHS tapes), magnetic reel-to-reel tapes, digital audio tapes (DAT), magnetic disks, write-once read-many (WORM) optical disks, and erasable/rewritable optical disks.

It is noted that Kassatly does not elaborate upon how such conventional systems are "compatible and usable" with his invention. Kassatly as understood fails to teach or suggest that such conventional systems are usable as either its "storage means 35 to 39" or its "storage devices 35-39". More importantly, the Examiner has not asserted that Kassatly teaches or suggests that such conventional systems as usable as either its "storage means 35 to 39" or its "storage devices 35-39".

Thus, the Examiner is required to provide a two-step motivation: (1) a motivation to modify storage means 35 to 39 or storage devices 35-39 to become one of the conventional systems, i.e., disk drives (motivation A-->B); and (2) a motivation to modify the disk drives to become mirrored disk drives (motivation B-->C).

The Examiner has failed to provide such a two-step motivation. The only motivations the Examiner has provided are "to handle possible failure of one drive in the array" and the "expected benefits from a manufacturing cost point of view of providing

redundancy in the storage devices to contain potential failure of a disk array". Such motivations are solely one-step motivations regarding replacing one disk drive with mirrored disk drives (motivation B-->C). The Examiner has failed to provide a motivation to replace Kassatly's "storage means 35 to 39" or "storage devices 35-39" each with a disk drive (motivation A-->B). Thus, the overall motivation to combine is incomplete, and the Examiner has failed to make a prima facie case of obviousness regarding claim 2.

Regarding claims 8 and 12, it is respectfully submitted that the Examiner has failed to make a prima facie showing of obviousness as argued above regarding claim 2. Regarding claim 9, it is respectfully submitted that it is allowable as a claim dependent from claim 8, which is allowable as argued above.

## **II. Claim 3 - The Examiner has Merely Provided a Statement of Operability**

The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. See In re Mills, 16 USPQ2d 1430 (Fed. Cir. 1990). Thus, an Examiner cannot merely provide a statement of operability, but must explain why one of ordinary skill would be motivated to combine the references.

It is respectfully submitted that the Examiner has merely provided a statement of operability regarding claim 3. It is noted that the Examiner has failed to provide an explicit motivation. The closest statement the Examiner has provided is that "the array of disk drives provides sufficient bandwidth to record or play digitized video signals, allowing random access to video data." This is merely a statement of operability showing that Kassatly and Windrem can be combined.

The reason this element of the prima facie case is called the "motivation to combine" is that there must be some missing element or function that calls out for the combination or modification. Otherwise it is difficult for the Examiner to set forth a convincing rationale for one of ordinary skill to be motivated or suggested to make the combination, and it would appear that the Examiner is merely using the claims as a template. The Examiner has not pointed to a deficiency in Kassatly that would be cured by such an addition. The Examiner has failed to identify anything in Kassatly, Windrem, or the knowledge generally available to one of ordinary skill in the art would motivate or suggest to one of ordinary skill in the art to combine Kassatly and Windrem.

Here is a concrete example. Assume that Kassatly already discloses that it has sufficient bandwidth to record or play digitized video signals, allowing random access to video data. (Specifically, the Examiner has not stated that Kassatly does not disclose this.) One of ordinary skill -- knowing that Kassatly already has sufficient bandwidth to record or play digitized video signals allowing random access to video data -- would then not be "motivated" to make any modifications. Any modifications are unnecessary (unless one's motivation is "to read upon claim 3"). It is difficult for the Examiner to argue otherwise. However, because the Examiner has argued otherwise, the present appeal has been filed.

Thus, it is respectfully submitted that the Examiner has failed to make a prima facie showing of obviousness regarding claim 3.

Regarding claim 13, it is respectfully submitted that the Examiner has failed to make a prima facie showing of obviousness as argued above regarding claim 3.

***Rejection of claims 4-5 and 14-15 under 35 U.S.C. § 103***

In the Office Action mailed September 28, 1999, the Examiner finally rejected claims 4-5 and 14 under 35 U.S.C. § 103 as being unpatentable over Kassatly in view of Nakayama, and claims 5 and 15 under 35 U.S.C. § 103 as being unpatentable over Kassatly in view of Nakayama, further in view of Morimoto.

**The Examiner's Position**

Regarding claim 4, the Examiner conceded that Kassatly fails to explicitly disclose wherein control data is multiplexed on data stream, the demultiplexing means demultiplexes the control data multiplexed on the data stream, and provision is made for controlling a recording operation of the recording means and reproduction operation of the reproducing means based on the demultiplexed control data. The Examiner stated that Nakayama teaches in Fig. 7 a recording/reproducing means that in the recording process multiplexes recorded data signals to which ID data (control data) had been added. The Examiner stated that in the reproduction process, these multiplexed data signals are later reproduced, demultiplexed and the ID data extracted (see col. 7, line 34 to col. 10, line 19). The Examiner stated that Nakayama clearly teaches that the ID data 137a to 137f (control data) are added during data processing for recording, the details of the processing of the ID data is clearly shown in Nakayama (see col. 7, line 10 to col. 10, line 19). The Examiner stated that it is desirable to record data signals with their respectable control data (e.g., ID data), and then multiplex the data signals with the control data in order to facilitate the recovery of the data signals during the reproduction process when the data signals are demultiplexed. The Examiner stated that to make these processes efficient there is inherently a control means that controls,

based on the control data, the recording/reproduction of the data signals. The Examiner concluded that it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kassatly by realizing Kassatly with a means add control data to data signals, during the recording process, before multiplexing, as taught by Nakayama, in order to facilitate the recovery of the data signal, during the reproduction process when the data signals are reproduced and demultiplexed. The Examiner further concluded that it would have been obvious to realize Kassatly with a control means in order to make these controlled recording/reproduction processes efficient.

Regarding the argument that the control data is demultiplexed before the recording process, the Examiner stated in the Advisory Action dated January 18, 2000 that Nakayama clearly teaches that the ID data 137a to 137f (control data) are added during data processing for recording, and that the details of the processing of the ID data are clearly shown in Nakayama (see col. 7, line 10 to col. 10, line 19). The Examiner asserted that when Kassatly is modified with the teaching of Nakayama, it would have been obvious that the recorded data would be reproduced before being "multiplexed" by the channel selector 50 of Kassatly.

Regarding claim 5, the Examiner stated that Nakayama teaches wherein at least one of the plurality of recording means and the reproducing means further performs operation in synchronization with a synchronization signal of the data stream (see Fig. 6, and col. 3, lines 8-37).

Regarding claim 14, the Examiner stated that the limitations of claim 14 are accommodated in the discussions of claim 4 above.

Regarding claims 5 and 15, the Examiner conceded that Kassatly and Nakayama fail to disclose wherein at least one of the

plurality of recording means and the reproducing means further performs operation in synchronization with a synchronization signal of the data stream. The Examiner stated that Morimoto teaches in Fig. 9 an input encoded data stream which is first input to a recording block formatter 28. The Examiner stated that a unit information generator 27 retrieves unit information (sync signal) from the input encoded data stream, so as to output the information to the recording block formatter 28 which formats the data stream so that the number M of successive transport packets are recorded as the number N of successive recording blocks. The Examiner stated that a reproducing head 9 outputs a reproduced signal from the recording medium 8. The Examiner stated that a reproducing processor 30 restores the data stream by performing a reproduction processing for the output reproduced signal (see col. 13, lines 23-65). The Examiner stated that here Morimoto teaches extracting the sync signal from an input encoded data stream and using the extracted sync signal to convert M successive transport packets to N successive recording packets and recording the converted signal on a recording medium. The Examiner stated that a reproducing system restores and reproduces the restored data stream based on the sync signal. The Examiner stated that the sync signal facilitates proper recording and reproducing of the data stream. The Examiner concluded that it would have been obvious to one of ordinary skill in the art to further modify Kassatly by realizing Kassatly with a means to provide recording/reproducing sync signal in order to facilitate proper recording and reproducing of a data stream.

**Rebuttal to The Examiner's Position**

In response, the rejection is respectfully traversed. It is respectfully submitted that the Examiner has failed to show that

Kassatly in view of Nakayama, or that Kassatly in view of Nakayama further in view of Morimoto, teaches or suggests all the claim elements.

Before proceeding to the specific arguments, it is noted that the Examiner has made conflicting rejections regarding claim 5. The Examiner has rejected claim 5 both with claims 4 and 14 and with claim 15. It is believed that the Examiner meant to reject claim 5 for the same reasons as claim 15, not claims 4 and 14. The Examiner is respectfully requested to confirm this understanding.

**I. The Control Data is Demultiplexed Before the Recording Process**

The Examiner has conceded that Kassatly fails to explicitly disclose wherein the demultiplexing means demultiplexes the control data multiplexed on the input data stream. To remedy this defect, the Examiner has stated that Nakayama teaches "add[ing] control data to data signals, during the recording process, before multiplexing . . . to facilitate the recovery of the data signal, during the reproduction process when the data signals are . . . demultiplexed".

The words of a claim must be given their plain meaning unless they are defined in the specification. See In re Zletz, 893 F.2d 319, 321 (Fed. Cir. 1989); see also Manual of Patent Examining Procedure § 2111.01 (1998). Claim 4 recites that the input data stream includes multiplexed control data. Claim 4 also recites that the input data is demultiplexed, recorded, reproduced, and multiplexed. Thus by its plain meaning, claim 4 sets forth that the control data is **demultiplexed before** the recording process. This is in direct contrast with the Examiner's asserted teaching of Nakayama that the control data is **added during** the recording process.

The Examiner has responded that "Nakayama clearly teaches that the ID data 137a to 137f (control data) are added during data processing for recording." Such a response highlights how the proposed combination of Kassatly and Nakayama fails to meet all the recited elements of claim 4. Claim 4 explicitly sets forth that the input data stream (which is provided to the demultiplexing means as set forth in claim 4) includes multiplexed control data. It is respectfully submitted that the Examiner's proposed combination, in which the control data do not appear until recording, cannot meet the recited claim elements setting forth that the control data is demultiplexed, where the demultiplexing occurs before the recording.

Besides the Examiner's stated asserted teaching of Nakayama, an examination of Nakayama itself shows that the ID data 147a-147f are demultiplexed after the recording and reproducing. See Fig. 7. This is in direct conflict with the plain meaning of claim 4 that the control data is demultiplexed before the recording process.

Thus, it is respectfully submitted that the Examiner has failed to show that the combination teaches or suggests all the claim elements.

## **II. The Control Means Controls a Recording Operation Based on the Demultiplexed Control Data**

The Examiner has conceded that Kassatly fails to explicitly disclose wherein provision is made for controlling a recording operation of the recording means based on the demultiplexed control data. To remedy this defect, the Examiner has stated that there is inherently in Nakayama a control means that controls, based on the control data, the recording/reproduction of the data signals.

Claim 4 recites a control means for controlling a recording operation based on control data. Claim 4 further recites that the



input data stream includes multiplexed control data. Claim 4 also recites that the demultiplexing means further demultiplexes the control data from the input data stream. Thus by its plain meaning, claim 4 sets forth that the control means controls a recording operation based on the demultiplexed control data.

The Examiner has failed to set forth that Nakayama teaches or suggests this feature. In fact, Nakayama as understood does not teach or suggest this feature. In Nakayama's Fig. 7, as understood, the ID data 137 is added, then multiplexed, then recorded, then reproduced, then demultiplexed. The demultiplexed control data 147, as understood, is used to generate reproduction control data. See col. 10, lines 1-8. Nothing in Nakayama, as understood, teaches or suggests that the demultiplexed control data 147 is used in any manner regarding controlling the recording process.

Thus, it is respectfully submitted that the Examiner has failed to show that the combination teaches or suggests all the claim elements.

For the above reasons, it is respectfully submitted that the Examiner has failed to show that claim 4 is not allowable. It is respectfully submitted that claim 14 is allowable for the same reasons as given above regarding claim 4. It is respectfully submitted that claims 5 and 15 are allowable as claims dependent from claims 4 and 14.

***Rejection of claims 6 and 16 under 35 U.S.C. § 103***

In the Office Action mailed September 28, 1999, the Examiner finally rejected claim 6 under 35 U.S.C. § 103 as being unpatentable over Kassatly in view of Nakayama, further in view of Windrem, and claim 16 under 35 U.S.C. § 103 as being unpatentable over Kassatly in view of Nakayama and Morimoto, further in view of Windrem.

**The Examiner's Position**

Regarding claim 6, the Examiner concedes that Kassatly and Nakayama fail to disclose a plurality of audio and/or video data recording and reproducing apparatuses being connected in parallel, and wherein the input data stream and the output data stream are input and output among the plurality of audio and/or video data recording and reproducing apparatus. The Examiner states that Windrem teaches in Fig. 1 a disk array 12 comprising an array of disk drives which provide sufficient bandwidth to record or play digitized video signals, allowing random access to video data (see Fig. 1; disk array 12; col. 1, lines 15-32; and col. 3, lines 31-52). The Examiner concludes that it would have been obvious to one of ordinary skill in the art to modify Kassatly by adding the disk array of Windrem to Kassatly since an array of disk drives provides sufficient bandwidth to record or play digitized video signals, allowing random access to video data.

Regarding the argument that the proposed combination fails to teach or suggest all the claim elements, the Examiner states that claims 6 recites "An audio and/or video data recording and reproducing apparatus according to claim 5 **further comprising** a plurality of audio and/or video data recording and reproducing apparatuses being connected in parallel, wherein said input data stream and said output data stream are input and output among said plurality of audio and/or video data recording and reproducing apparatuses". The Examiner states that the preamble of claim 6 is accommodated in the discussions of claim 1 on which claim 6 is remotely dependent. The Examiner states that Windrem is applied to address the "further comprising" portion of claim 6.

### **Rebuttal to The Examiner's Position**

In response, the rejection is respectfully traversed. It is respectfully submitted that the Examiner has failed to provide a valid motivation to combine, and has failed to show that the combination teaches or suggests all the claim elements.

#### **I. The Examiner has Merely Provided a Statement of Operability**

The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. See In re Mills, 16 USPQ2d 1430 (Fed. Cir. 1990). Thus, an Examiner cannot merely provide a statement of operability, but must explain why one of ordinary skill would be motivated to combine the references.

It is respectfully submitted that the Examiner has merely provided a statement of operability. It is noted that the Examiner has failed to provide an explicit motivation. The closest statement the Examiner has provided is that "the array of disk drives provides sufficient bandwidth to record or play digitized video signals, allowing random access to video data." This is merely a statement of operability showing that Kassatly, Nakayama and Windrem can be combined.

Thus, it is respectfully submitted that the Examiner has failed to provide a valid motivation to combine.

#### **II. Applicant can be His Own Lexicographer**

An applicant can be his own lexicographer. See Autogiro Co. of America v. United States, 155 USPQ 697, 702 (Ct. Cl. 1967); see also Manual of Patent Examining Procedure § 2173.05(a) at

page 2100-165 (1998). When an element is defined in a parent claim, a second of that element added in a dependent claim includes everything defined for that element in the parent claim, in a manner consistent with the specification and drawings.

An example illustrates the above concept. Assume Claim X recites "An apparatus comprising: an element A, wherein said element A includes b1, b2 and b3." Assume Claim Y recites "The apparatus of claim X, further comprising: a second element A." In such a case, Claim Y has two element As, and the second element A includes its own components b1, b2 and b3. It is not required to explicitly set forth the components of the second element A because they are provided through antecedent basis from Claim X. Claim Y may be rewritten in independent form as "An apparatus comprising: an element A; and a second element A, wherein said element A includes b1, b2 and b3." Thus, to read on Claim Y, the combination of references must teach or suggest an apparatus having two element As, wherein each element A includes b1, b2 and b3.

Extending the example, assume Claim Z recites "The apparatus of claim X, further comprising a plurality of element As." To read on claim Z, the combination of references must teach or suggest an apparatus having at least three element As (one from Claim X and two or more from the plurality), wherein each element A includes b1, b2 and b3.

This example is applicable to claim 6 as follows. Claim 4 has defined "an audio and/or video data recording and reproducing apparatus" (element A) as comprising a receiving means (component b1), a demultiplexing means (component b2), a plurality of recording means (component b3), a reproducing means (component b4), a multiplexing means (component b5), and a control means (component b6). Claim 6 further comprises "a plurality of audio

and/or video data recording and reproducing apparatuses" (plurality of element As). Thus, in claim 6 there are at least three element As, and each of the element As include components b1, b2, b3, b4, b5 and b6. Moreover, this interpretation is supported in the specification and drawings. See Fig. 11 (showing a plurality of audio and/or video data recording and reproducing apparatuses 5a-5f); and the specification at page 40, lines 8-11 (showing that the audio and/or video data recording and reproducing apparatuses 5a-5f have the same configuration as that of the audio and/or video data recording and reproducing apparatus 5 of Fig. 8).

It is respectfully submitted that the Examiner is defining "a plurality of audio and/or video data recording and reproducing apparatuses" in a manner different from that defined by the applicants in claims 4 and 6, in the specification, and in the drawings. The Examiner has stated that Windrem teaches a disk array comprising an array of disk drives. It is respectfully submitted that a disk array is not a plurality of audio and/or video data recording and reproducing apparatuses. The Examiner has failed to state that Windrem teaches a plurality of devices, each device having a receiving means, a demultiplexing means, a plurality of recording means, a reproducing means, a multiplexing means, and a recording and reproduction control means, wherein the devices are connected in parallel and wherein the input and output data streams are input and output among the plurality of devices. The Examiner has failed to point out how any cited reference teaches or suggests these recited claim features. Thus, the Examiner's proposed combination fails to read on claim 6.

For the above reasons, it is respectfully submitted that the Examiner has failed to show that claim 6 is not allowable. It is

respectfully submitted that claim 16 is allowable for the same reasons as given above regarding claim 6.

**CONCLUSION**

The Examiner's rejections regarding claims 2-6, 8-9 and 12-16 are erroneous and should be reversed.

Respectfully submitted,  
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APPENDIX

Claims on Appeal

2. (Twice Amended) An audio and/or video data recording and reproducing apparatus, comprising:

a receiving means for receiving an input data stream having a plurality of channels of at least one of audio data and video data being multiplexed in a predetermined order;

a demultiplexing means for demultiplexing each one of said plurality of channels from the received input data stream;

a plurality of recording means for recording the demultiplexed each one so that random access is possible, wherein one of said plurality of recording means is configured to record exactly one of said plurality of channels;

a reproducing means for reproducing the recorded each one from said plurality of recording means; and

a multiplexing means for multiplexing the reproduced each one in said predetermined order and generating an output data stream,

wherein each of said plurality of recording means adopts a mirror configuration having a plurality of recording apparatuses for recording the same audio and/or video data.

3. (Twice Amended) An audio and/or video data recording and reproducing apparatus, comprising:

a receiving means for receiving an input data stream having a plurality of channels of at least one of audio data and video data being multiplexed in a predetermined order;

a demultiplexing means for demultiplexing each one of said plurality of channels from the received input data stream;

a plurality of recording means for recording the demultiplexed each one so that random access is possible, wherein one of said plurality of recording means is configured to record exactly one of said plurality of channels;

a reproducing means for reproducing the recorded each one from said plurality of recording means; and

a multiplexing means for multiplexing the reproduced each one in said predetermined order and generating an output data stream,

wherein each of said plurality of recording means adopts an array configuration in which a plurality of recording apparatuses are connected in parallel.

4. (Twice Amended) An audio and/or video data recording and reproducing apparatus comprising:

a receiving means for receiving an input data stream having a plurality of channels of at least one of audio data and video data being multiplexed in a predetermined order;

a demultiplexing means for demultiplexing each one of said plurality of channels from the received input data stream;

a plurality of recording means for recording the demultiplexed each one so that random access is possible, wherein one of said plurality of recording means is configured to record exactly one of said plurality of channels;

a reproducing means for reproducing the recorded each one from said plurality of recording means;

a multiplexing means for multiplexing the reproduced each one in said predetermined order and generating an output data stream;  
and



a recording and reproduction control means for controlling a recording operation of said plurality of recording means and a reproduction operation of said reproducing means based on control data,

wherein said input data stream includes multiplexed control data, and

wherein said demultiplexing means further demultiplexes said control data from the received input data stream.

5. (Amended) An audio and/or video data recording and reproducing apparatus according to claim 4, wherein:

at least one of said plurality of recording means further performs said recording operation in synchronization with a synchronization signal of the received input data stream; and

said reproducing means further performs said reproduction operation in synchronization with said synchronization signal.

6. (Amended) An audio and/or video data recording and reproducing apparatus according to claim 5, further comprising:

a plurality of audio and/or video data recording and reproducing apparatuses being connected in parallel, wherein said input data stream and said output data stream are input and output among said plurality of audio and/or video data recording and reproducing apparatuses.

8. (Twice Amended) An audio and/or video data recording and reproduction method, comprising the steps of:

receiving an input data stream having a plurality of channels of at least one of audio data and video data being multiplexed in a predetermined order;

demultiplexing each one of said plurality of channels from the received input data stream;

recording the demultiplexed each one so that random access is possible, wherein one of said plurality of channels is recorded on exactly one of a plurality of recording means for recording;

reproducing the recorded each one from said plurality of recording means; and

multiplexing the reproduced each one in said predetermined order and generating an output data stream,

wherein the demultiplexed each one is duplicated on more than one recording medium to perform backup of the demultiplexed each one.

9. (Amended) An audio and/or video data recording and reproduction method according to claim 8, wherein:

the demultiplexed each one of said plurality of channels is recorded in parallel with the rest of said plurality of channels on a plurality of recording media.

12. (Amended) An audio and/or video data recording and reproducing apparatus, comprising:

an input circuit configured to receive an input data stream having a plurality of channels of at least one of audio data and video data being multiplexed in a predetermined order;

a data controller circuit configured to demultiplex each one of said plurality of channels from the received input data stream;

a plurality of disk drives configured to record the demultiplexed each one so that random access is possible, wherein one of said plurality of disk drives is configured to record exactly one of said plurality of channels, and wherein at least one of said plurality of disk drives is further configured to reproduce the recorded each one from said plurality of disk drives; and

a multiplexer circuit configured to multiplex the reproduced each one in said predetermined order and to generate an output data stream,

wherein each of said plurality of disk drives adopts a mirror configuration having a plurality of recording apparatuses for recording the same audio and/or video data.

13. (Amended) An audio and/or video data recording and reproducing apparatus, comprising:

an input circuit configured to receive an input data stream having a plurality of channels of at least one of audio data and video data being multiplexed in a predetermined order;

a data controller circuit configured to demultiplex each one of said plurality of channels from the received input data stream;

a plurality of disk drives configured to record the demultiplexed each one so that random access is possible, wherein one of said plurality of disk drives is configured to record exactly one of said plurality of channels, and wherein at least one of said plurality of disk drives is further configured to reproduce the recorded each one from said plurality of disk drives; and

a multiplexer circuit configured to multiplex the reproduced each one in said predetermined order and to generate an output data stream,

wherein each of said plurality of disk drives adopts an array configuration in which a plurality of recording apparatuses are connected in parallel.

14. (Amended) An audio and/or video data recording and reproducing apparatus comprising:

an input circuit configured to receive an input data stream having a plurality of channels of at least one of audio data and video data being multiplexed in a predetermined order;

a data controller circuit configured to demultiplex each one of said plurality of channels from the received input data stream;

a plurality of disk drives configured to record the demultiplexed each one so that random access is possible, wherein one of said plurality of disk drives is configured to record exactly one of said plurality of channels, and wherein at least one of said plurality of disk drives is further configured to reproduce the recorded each one from said plurality of disk drives;

a multiplexer circuit configured to multiplex the reproduced each one in said predetermined order and to generate an output data stream; and

a control circuit configured to control a recording operation of said plurality of disk drives and a reproduction operation of said at least one disk drive based on control data,

wherein said input data stream includes multiplexed control data, and

wherein said data controller circuit is further configured to demultiplex said control data from the received input data stream.

15. An audio and/or video data recording and reproducing apparatus according to claim 14, wherein:

one or more of said plurality of disk drives are further configured to perform said recording operation in synchronization with a synchronization signal of the received input data stream; and

said at least one disk drive is further configured to perform said reproduction operation in synchronization with said synchronization signal.

16. An audio and/or video data recording and reproducing apparatus according to claim 15, further comprising:

a plurality of audio and/or video data recording and reproducing apparatuses being connected in parallel, wherein said input data stream and said output data stream are input and output among said plurality of audio and/or video data recording and reproducing apparatuses.